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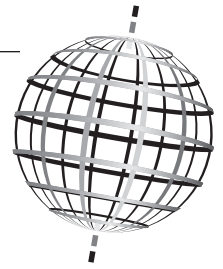
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Résumé de l'article

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The impact of entry modes on export knowledge resources and the international performance of SMEs



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RÉSUMÉ

Cette étude explore le rôle que les modes d'entrée – conceptualisés en tant que formes d'expérience internationale – jouent dans la création des connaissances à l'export et dans le renforcement de la performance internationale des petites et moyennes entreprises (PME). Un modèle causal développé et testé sur la base d'un échantillon de 107 PME françaises de l'industrie des métaux, suggère que les modes d'entrée ont un impact direct sur le niveau des connaissances explicites des PME à l'égard des marchés étrangers ainsi qu'un impact indirect sur les connaissances tacites. Les connaissances tacites concernant les marchés étrangers améliorent la performance internationale des PME.

Mots clés : mode d'entrée, connaissances tacites et explicites, KBV, PME, performance internationale

ABSTRACT

This research conceptualizes entry modes as forms of international experience that small and medium-sized enterprises (SMEs) gather and explores the role they play in building export knowledge and fostering international performance. Using a sample of 107 French SMEs from the steel industry, a causal model suggests that various entry modes have direct impacts on the level of explicit foreign market-related knowledge in SMEs and an indirect impact on tacit knowledge. Explicit and tacit knowledge correlate positively, and ultimately, an SME's tacit knowledge regarding export markets improves its international performance.

Keywords: entry mode, tacit and explicit knowledge, KBV, SMEs, international performance

RESUMEN

Este estudio explora el papel que desempeñan los modos de entrada en la creación del conocimiento de la exportación, fomentando y reforzando el funcionamiento internacional. El modelo de investigación a sido sometido a un test en una muestra de 107 PYMES francesas de la industria siderúrgica. Los resultados sugieren que los modos de entrada tienen un impacto directo en el nivel del conocimiento explícito de PYMES relacionado con el mercado extranjero y un impacto indirecto en conocimiento tácito. In fine el conocimiento tácito con respecto a los mercados de exportación mejora el funcionamiento internacional de las PYMES.

Palabras claves: modos de la entrada, conocimiento tácito y explícito, KBV, PYMES funcionamiento internacional

In some cases, the way a small or medium-sized enterprise (SME) enters a foreign market is the result of an unplanned encounter during a trade fair or an exploratory visit abroad. These SMEs thus lack international experience at the moment they meet their future partner abroad. If they knew the extent to which the consequences of these encounters would shape their learning about foreign markets, and ultimately their performance abroad, they might think twice before signing their initial export, piggyback, or licensing agreement. That is, the choice of a foreign market entry mode is of utmost strategic importance for the international development of SMEs (Brouthers and Nakos, 2005). Some authors even call it “the firm's most important strategic choices” (Woisetschlager and Evanschitzky, 2005, p. 4).

Several studies investigate SMEs' internationalization processes (e.g., Oviatt and McDougall, 1994; Barringer and Greening, 1998), including why SMEs choose one entry mode over another (Choo and Mazzarol, 2001; Brouthers and Nakos, 2005). Various influence factors include firm size (Agarwal and Ramaswami, 1992; Calof, 1993), experience (Johanson and Vahlne, 1977), product strength (Cavusgil and Naor, 1987), managerial capabilities (Aaby and Slater, 1989), market potential (Agarwal and Ramaswami, 1992), national culture (Mayrhofer, 2002), cultural

differences (Johanson and Vahlne, 1977; Klein and Roth, 1990), assets' specificity (Khemarkem, 2007), and so on. Yet the actual consequences of this choice seem to have received much less attention (Choo and Mazzarol, 2001)

Since the introduction of the Uppsala model of internationalization, the conventional wisdom is that entry modes influence the flow of information between the firm and the foreign market (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977). Entry modes thus facilitate or hamper firms' access to the foreign market knowledge resources that they require to overcome differences in language, education, business practices, culture, religion, political systems, industrial development, or geographic distance (Johanson and Vahlne, 1977; Dow, 2000). In the modern business environment, knowledge-based resources and the creation of knowledge through learning are basic mechanisms that underlie competitive advantages and business success (e.g., Grant, 1996; DeNisi et al., 2003; Patriotta, 2004; Warnier, 2005). In the case of SMEs, access to knowledge-based resources in foreign markets is vital, because they generally lack knowledge-based capabilities to develop international operations successfully (e.g., Kuivainen and Bell, 2004; Fletcher, 2006).

Although entry modes thus strongly influence SMEs' access to knowledge-related resources in export markets

(Kuivalainen and Bell, 2004; Woiseschläger and Evanschitzky, 2005) and export performance (Choo and Mazzarol, 2001), relatively little empirical research is directed specifically toward this subject. To address this gap, we investigate the impact of entry mode choice on the creation of explicit and tacit export knowledge and thus ultimately on the international performance of SMEs.

Literature review and research model

Exporting refers to the sale of products and/or services beyond national borders and takes two main forms, namely, direct and indirect exporting (e.g., Miesenbock, 1988; Young et al., 1989). Compared with indirect exporting (e.g., through agents, representatives, or distributors), direct exporting implies more involvement of the exporting company, a higher level of risk, more control over the development of international activities, and better access to knowledge resources in export markets (Mühlbacher et al., 2006). Thus, entry modes reflect an obvious choice in terms of resources and control deployment. They simultaneously affect the transfer of knowledge, creation of value within the organization, and diversity of know-how related to export markets (Kogut and Zander, 1993; Kuivalainen and Bell, 2004). Entry mode choices are of particular concern to SMEs, more so than for large firms, because they often confront these decisions in the earliest phases of their internationalization process because they have fewer resources, which makes any investment more risky (Woiseschläger and Evanschitzky, 2005).

ENTRY MODES AS FORMS OF INTERNATIONAL EXPERIENCE

When SMEs develop their international activities, they pursue various direct and indirect entry modes, including exporting, franchising, licensing, piggybacking, joint ventures, strategic alliances, and subsidiaries abroad. Direct and indirect exporting constitute essential forms of SMEs' commitments abroad (Bell et al., 1992; Bell, 1995; Covello and McAuley, 1999; Kuivalainen and Bell, 2004). These entry modes therefore represent forms of international experience, in that by definition, they represent the way a company accesses foreign markets.

The role of international experience for firms' learning and knowledge creation is widely recognized in the field of organizational learning (e.g., Kolb, 1976, 1984; Nelson and Winter, 1982) and with the knowledge-based view (KBV) of the firm (Grant, 1996, 2002; Patriotta, 2004; Spender, 2007). According to the KBV, knowledge development is a path-dependent process that requires previous experience as a driving factor of future development (Kuivalainen and Bell, 2004; Kodama, 2005). Knowledge resources entail a system of codified information (Kogut and Zander, 1993; Autio et al., 2000), and knowledge can be tacit or explicit.

TACIT AND EXPLICIT KNOWLEDGE

Explicit knowledge is objective by nature. It takes forms such as quantifiable data, codifiable procedures, universally accepted principles, scientific formulas, or manuals. Because explicit knowledge is codifiable, it is transferable (Nonaka, 1991; Nonaka et al., 2000). Firms likely possess explicit knowledge about foreign clients, competitors, and market environments (Ramangalahy, 2001).

Tacit knowledge instead is embedded in individual members of the firm (Nonaka, 1994). It is subjective, experiential, and hard to formalize (Nonaka et al., 2000), which means it is more likely to be a unique, inimitable, immobile resource (Barney, 1991). It reflects distinct pathways for firm development, such that rivals likely cannot use or disseminate it (Nelson and Winter, 1982). Tacit knowledge gets transferred or built through experience and action (Kogut and Zander, 1993; Grant, 1996; Spender, 1998). In exporting SMEs, Ramangalahy (2001) highlights the importance of several types of tacit knowledge, such as competence in export information management, networking, segmentation, and marketing mix management.

RESEARCH PROPOSITIONS

As a basic proposition, we posit that entry modes represent forms of international experience, because by definition, they are the basic mechanisms that small firms use to extend their activities beyond national borders. Various studies deliver empirical support regarding the importance of the level of export experience as it pertains to SMEs' international development (e.g., Cavusgil and Zou, 1994; Hart et al., 1994; Ogbuehi and Longfellow, 1994).

The KBV acknowledges the role of entry modes as forms of international experience in the knowledge creation process (Mahoney, 1995; Christensen, 1995; Barney, 1996). As a result, the KBV provides an interesting framework for our research. In dynamic, turbulent environments, knowledge-based assets, especially tacit ones, make key contributions to performance (Grant, 1996; Miller and Shamsie, 1996; DeNisi et al., 2003; Patriotta, 2004; Spender, 2007). According to the KBV, knowledge creation through learning is the mechanism that leads firms toward a sustainable competitive advantage and success (e.g., DeNisi et al., 2003; Patriotta, 2004; Warnier, 2005).

Thus, according to the KBV, entry modes as forms of international experience enhance the development of tacit and explicit knowledge in small firms related to foreign settings. Furthermore, tacit and explicit export knowledge influences the level of international performance by firms. We rely on these basic premises to develop our research hypotheses.

Impact of entry modes on foreign market knowledge resources.

If entry modes represent forms of international experience, they should influence the development of foreign market-related knowledge. As firms accumulate international experience, they develop routines, rules, and action procedures that help them solve problems on the basis of their previous foreign experience (Laghzaoui, 2007). International experience in this context refers to the knowledge that enterprises can capitalize on by doing business in a given market (e.g., Cavusgil and Zou, 1994; Basly, 2007; Nguyen, 2007).

The accumulation of knowledge is a function of both the length and the variety of experiences. Length of experience refers to the time during which firms operate abroad using a specific entry mode. It is logical that a firm that has used, for example, indirect exporting for 20 years has more foreign experience than a firm that has been exporting indirectly for only 5 years. Therefore, we sum the number of years an SME has operated abroad under one or several entry modes as a measure of the length of its international experience. However, this indicator is limited in that it assumes different foreign entry modes are equivalent. To offset this limit, we take into account the variety of entry modes used (see hypothesis 3).

The use of experience to explain SMEs' international development is well established in extant literature. With experience, firms can better exploit export market information and opportunities, improve their consolidation of foreign knowledge-related capabilities, and perform better internationally (e.g., Johanson and Wiedersheim-Paul, 1975; Denis and Depelteau, 1985; Johanson and Vahlne, 1993; Welch and Luostarinen, 1993). With their previous experience, small firms also may be more likely to discover how to exploit export market-related information and opportunities to improve their foreign market-related knowledge. Thus, we expect that

H1: The length of international experience of an SME positively affects the level of its foreign market-related explicit knowledge.

Because tacit knowledge results from distinct development pathways (Nelson and Winter, 1982; Spender, 1998), builds over time, and is consolidated through experience, we also expect that

H2: The length of international experience of an SME positively affects the level of its foreign market-related tacit knowledge.

However, several scholars warn that length measures are limited indicators of foreign market-based learning processes (e.g., Kuivalainen and Bell, 2004). Furthermore, the availability of electronic information and the dynamics of globalization reduce internationalization learning cycles. Therefore, it seems useful to consider international experience variety in addition to length (Cohen and Levin-

thal, 1990). A firm using several entry modes should confront a wider range of experiences in foreign markets than a firm that relies on one unique mode. In this sense, we argue that entry modes affect knowledge transfer, value creation within the organization, and the diversity of know-how related to export markets (Kogut and Zander, 1993; Kuivalainen and Bell, 2004). Therefore, the variety of entry modes SMEs use to enter foreign markets summarizes their experience and has an impact on both their explicit and tacit foreign market-related knowledge levels:

H3: The variety of entry modes used by an SME positively affects its level of explicit foreign market-related knowledge.

H4: The variety of entry modes used by an SME positively affects its level of tacit foreign market-related knowledge.

Recursive relationship between explicit and tacit knowledge.

Explicit foreign market-related knowledge provides guidance for how SMEs should respond to foreign markets shifts. Explicit knowledge is codifiable and transferable (Nonaka, 1991, Nonaka et al., 2000), and when it becomes encoded in firms' actions, explicit knowledge transforms into tacit knowledge (Nonaka, 1994; Autio et al., 2000; Nonaka et al., 2000). Tacit knowledge in turn provides a better understanding of incoming explicit knowledge. Therefore scholars often consider knowledge creation a cycle or a spiral, where tacit and explicit knowledge build on each other (Nonaka, 1994; Hedlund, 1994; Spender, 1998). In turn, we propose

H5: The level of explicit and tacit export knowledge of an SME are positively correlated.

Impact of explicit and tacit knowledge on international performance.

Finally, in dynamic, turbulent environments, knowledge-based assets contribute to performance (Grant, 1996; Miller and Shamsie, 1996; DeNisi et al., 2003; Patriotta, 2004; Spender, 2007). For manufacturing SMEs that undertake an internationalization process, strong empirical support indicates that their international marketing knowledge has a significant impact on their international performance (e.g., Miesenbock, 1988; Ford and Leonidou, 1991; Holz-müller and Kasper, 1991; Axinn et al., 1996; Cavusgil and Zou, 1994; Ramangalahy, 2001; Julien and Ramangalahy, 2003; Leonidou and Katsikeas, 1996; Sousa, 2004; Morgan et al., 2003; Zou et al., 2003). According to the KBV, the positional advantage an SME gains through its international marketing knowledge determines its international performance. Therefore,

H6: The level of explicit export knowledge of an SME positively affects its international performance.

H7: The level of tacit export knowledge of an SME positively affects its international performance.

CONTROL VARIABLES

Several scholars suggest that translating marketing knowledge into successful export performance depends on firm characteristics (Porter, 1980; Cavusgil and Zou, 1994). Thus, to assess the impact of entry modes on the level of export market knowledge, and ultimately the impact of tacit and explicit knowledge on international performance, we control for the impacts of firm size and percentage of foreign sales. Various studies confirm that firm size (Burton and Schlegelmilch, 1987; Calof, 1994) and the percentage of foreign sales (Cavusgil and Nevin, 1981; Cavusgil and Zou, 1994; Leonidou et al., 1998) are salient determinants of levels of foreign performance. Both variables also tend to influence the SME's commitment to allocating resources (e.g., marketing, financial, personnel, production) to exporting.

In Figure 1, we summarize our research hypotheses.

Research methodology

DATA COLLECTION

Considering the causal nature of the research problem, we opted for a quantitative methodological approach and designed our questionnaire on the basis of our review of prior literature. The pretest included export managers of 12 small exporting firms; after minor adjustments, we administered the survey to 624 French SMEs of the steel indus-

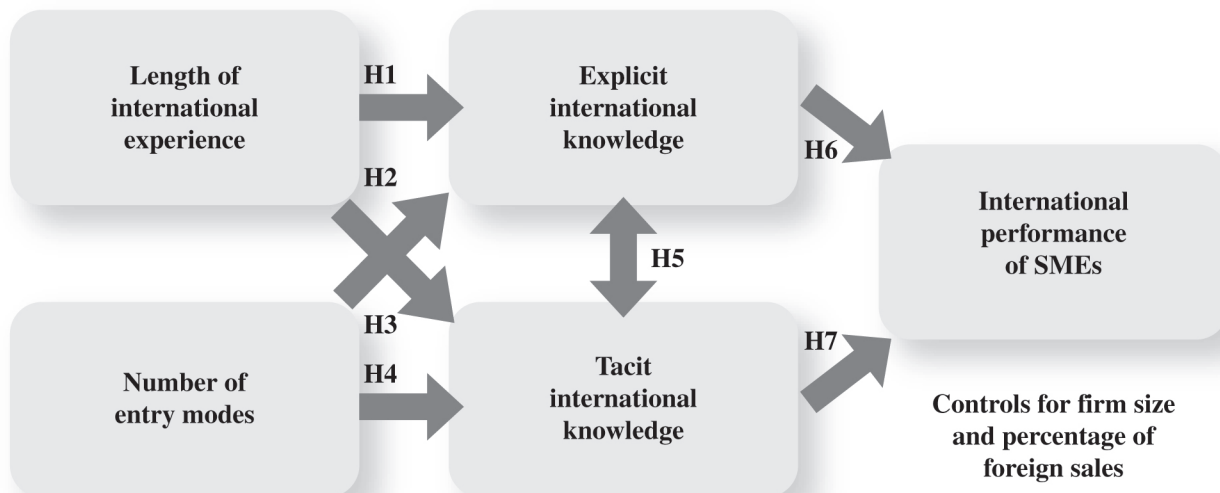
try. After a phase of decline, the French steel industry has become a significant contributor to the international competitiveness of the country's manufacturing sector again and is therefore a worthy object of analysis.

We relied on the DIANE database to extract company information, such as location, number of employees, and industrial sector. The population was limited to exporting SMEs that employed between 11 and 250 people. The data collection spanned four waves, resulting in 107 usable questionnaires and a final response rate of 19.1%.

MEASURES

Regarding the length of international experience and variety of export entry modes, we adapted scales from Kuivalainen and Bell (2004). For the level of firms' tacit knowledge, we adapted (after a pretest) the scale developed by Ramangalahy (2001). This scale consisted of seven groups of marketing competence related to (1) market information management, (2) communication strategy, (3) distribution strategy, (4) price strategy, (5) product strategy, (6) marketing management strategy, and (7) networking competence. Therefore, we measured tacit knowledge as the level of foreign market-related competence; previous studies suggest that for SME managers, the term "competence" is similar in meaning to tacit knowledge (Mogos-Descotes, 2009). This target population also defines "information" similarly to the scholarly meaning of explicit knowledge. Therefore, we used Ramangalahy's (2001) scale and measured the explicit foreign market-related information in SMEs with regard to (1) the general foreign market environment, (2) potential clients, (3) competitors, (4) products, (5) price and

FIGURE 1
Research hypotheses



payment practices, (6) communication, and (7) distribution practices. Finally, our measure of SMEs' international performance was adapted from Zou et al. (1998), probably the most widely used measure to capture this construct.

To assess firm size, we used the number of employees of the firm; the percentage of foreign sales was calculated as the percentage of foreign sales from the total turnover of the firm. We present these measures in more detail in Appendix 1.

SAMPLE DESCRIPTION

The final sample contained 107 enterprises, which employed an average of 86.38 persons (standard deviation [SD] = 69.65; median = 64; min = 11, max = 275). On average, exports accounted for 40.49% of their total turnover (SD = 26.19; median = 35.00; min = 1, max = 97). Their international experience was considerable, in that the sample companies have conducted international activities for 24.04 years on average (SD = 15.66; median = 21.00; min = 1, max = 79.00). Only 6.7% of the companies had less than five years of export experience, and more than half of them (51.90%) began exporting activities between 16 and 45 years ago, whereas 15.7% started more than 46 years ago.

On average, the companies interviewed used 2.14 entry modes abroad (SD = 1.04; median = 2; mode = 1; min = 1, max = 5). As we document in Table 1, most companies used rather basic foreign entry modes, such as direct (97.17%) or indirect (60.37%) exporting, though almost one-third also employed collaborative modes, such as strategic alliances or joint ventures (26.66%), or owned a subsidiary abroad (33.96%). Experience with Internet sales was sparse and recent, and none of the companies had undertaken foreign sales though franchising or licensing.

By examining the number of years the companies used a specific entry mode, we determined that they had been using direct exporting for longer than indirect exporting, followed by collaborative modes, subsidiaries, and other modes. According to these results, companies in this sample progressively began to employ more elaborate foreign presence modes as they became accustomed to developing their operations in foreign markets.

The average international experience of the SMEs - calculated as the total number of years that companies spent in developing foreign activities - was 39.27 years (SD = 28.41 years; median = 30; min = 4, max = 129).

With regard to explicit export knowledge, clients emerged as the most important source for SMEs (SD = 1.12; mean = 4.57; median = 4; mode = 4), whereas communication was least important (SD = 1.36; mean = 4.04; median = 4; mode = 4). The relative importance of other types of explicit export knowledge were as follows: products (SD = 1.27; mean = 4.63; median = 5; mode = 4), prices (SD = 1.15; mean = 4.32; median = 4; mode = 4), competitors (SD = 1.13; mean = 4.23; median = 4; mode = 4), general market information (SD = 1.22; mean = 4.16; median = 4; mode = 4), and distribution (SD = 1.19; mean = 4.15; median = 4; mode = 4).

For the levels of tacit knowledge, SMEs in our sample reported the highest level of competence in their product strategy development (SD 1.21; mean = 4.75; median = 5, mode = 5), followed by foreign networking (SD = 1.28; mean = 4.70; median = 5, mode = 5), foreign pricing strategy (SD = 1.09; mean = 4.40; median = 4, mode = 4), foreign market segmentation (SD = 1.29; mean = 4.29; median = 4, mode = 3), export information management (SD = 1.21; mean = 4.25; median = 4, mode = 4), international communication strategy (SD = 1.28; mean = 4.12; median = 4, mode = 4), international distribution strategy (SD =

TABLE 1
Foreign entry modes

Foreign entry modes analyzed	Frequency of entry modes	Average number of years using the entry mode	Standard deviation
Indirect exporting	97.17%	21.09	14.38
Direct exporting	60.37%	8.46	13.07
Collaborative modes (strategic alliance, joint venture, etc.)	26.66%	3.72	8.09
Franchising, licensing	0.00%	-	-
Foreign subsidiary	33.96%	3.72	8.05
Internet sales	5.66%	0.29	1.25
Other modes	7.54%	1.00	4.40

1.37; mean = 4.06; median = 4, mode = 4), and finally international marketing management ($SD = 1.40$; mean = 3.90; median = 4, mode = 4).

The two objective measures of international performance, evolution of export sales profits and export sales volume over the previous three years, came from the DIANE database. On average, export sales increased by 19.20% in the previous three years ($SD = 38.42$; median = 13.80; min = -44.76; max = 209.86), and companies registered an average increase of 17.24% in their export sales profits in that period ($SD = 35.28$; median = 15.65; min = -37.65; max = 168.86). The sample thus seems generally composed of successful companies, possibly more successful than the average French SME operating in the steel industry. Nonetheless, in terms of firm size, companies in the sample are similar to the population of the study.

PSYCHOMETRIC PROPERTIES OF THE MEASURES

To assess the psychometric properties of the measures, we employed partial least squares path modeling (PLSPM) rather than LISREL, because the related structural equation model enabled us to test the research model while also assessing the properties of the measurement model. In particular, PLS is advantageous for small sample sizes and in the initial phase of theory building (Fornell and Bookstein, 1982). According to Fornell and Larcker (1981), PLS is also more robust than LISREL, in that it does not require normally distributed data.

All measures are internally consistent (unidimensionality and reliability). The three latent constructs - international tacit and explicit knowledge and SMEs' export performance - are unidimensional constructs (we extracted a single eigenvalue greater than 1). Moreover, the respective manifest variables (MV) all load on their latent constructs, as expected theoretically, and the lowest loading (0.57, for perceived overall export performance) is above the critical accepted value of 0.5 (Fornell and Larcker, 1981). The ρ coefficient of all three latent constructs also is greater than 0.7 (Fornell and Larcker, 1981; Fornell and Bookstein, 1982), in support of construct reliability (explicit knowledge = 0.84; tacit knowledge = 0.92; international performance = 0.82).

We confirmed the discriminant validity of the constructs; the lowest square root of the average variance extracted associated with the three constructs was 0.52 (explicit knowledge), whereas the highest correlation coefficient between latent constructs was 0.49 (between international tacit and explicit knowledge).

HYPOTHESES TESTS

To test H1-4, we used PLSPM. However, because H5 posits a recursive influence relationship between SMEs' levels

of explicit and tacit knowledge, which PLSPM cannot estimate, we used the scores estimated with PLSPM for the latent variables to calculate the correlation between the two constructs with a Pearson correlation test.

For H6 and H7, which predict positive impacts of tacit and explicit knowledge about foreign markets on international performance, we used two-stage least squares regression analysis (2SLS) and thus extended our regression to cover models that violate an ordinary least square (OLS) regression's assumption of recursivity, such as when researchers must assume that the disturbance terms of the predictors are not independent (Berry, 1984). Because tacit and explicit knowledge are interrelated, the 2SLS regression method is preferable, in that it can assess their impact on international performance. The 2SLS method takes two steps. First, on the basis of the correlated predictors, we calculate the instrumental variables by isolating the common variance of the initial variables. Second, we assess the impact of the instrumental variables on the dependent variable (as in classical OLS).

In Table 2, we outline the results of the hypotheses tests. We confirm three of our research hypotheses (H3, H5, and H6) at the 95% level. Two hypotheses are only marginally significant (H1 and H4), and two research hypotheses (H2 and H6) do not receive support from the results. We therefore assert that for the 107 exporting SMEs sampled for this research: (1) financial export performance depends on the level of tacit export knowledge, (2) explicit and tacit knowledge are positively correlated, and (3) the number of entry modes used by SMEs affect their level of explicit knowledge relative to export markets. We also find weak support for the following relationships: (1) the longer the international experience of SMEs, the higher is their level of explicit export knowledge and (2) the more different entry modes the SMEs use, the higher is their level of tacit export knowledge. The length of international experience has an insignificant effect on the level of explicit export knowledge of SMEs, and surprisingly, the level of explicit knowledge of SMEs has no direct impact on their international performance.

To gain additional insights into the role played by entry modes for explicit and tacit export knowledge in SMEs, we conducted two analyses of variance (ANOVAs), in which we grouped the companies in the sample into three categories, according to the number of entry modes they had used (1 = 1 entry mode, 2 = 2 entry modes, 3 = 3 or more entry modes). The Welch test indicated homogeneous variances between the three groups for both international explicit knowledge ($p < 0.05$) and tacit knowledge ($p < 0.001$). Post-hoc tests (Scheffe test) also revealed that companies in groups 2 (mean = 4.54) and 3 (mean = 4.69) were characterized by a significantly higher level of explicit knowledge ($p < 0.05$) than companies that used a single entry mode (mean = 3.96). We found no significant difference in the explicit knowledge level between companies using two versus

TABLE 2
Summary of research hypotheses findings

Hypotheses	Validation	Level of significance and standardized regression coefficients
H1: Length of export experience → explicit export knowledge	Weak support	$p < 0.10$, $\beta = 0.09$
H2: Length of export experience → tacit export knowledge	No	n.s.
H3: Number of entry modes → explicit export knowledge	Yes	$p < 0.05$, $\beta = 0.17$
H4: Number of entry modes → tacit export knowledge	Weak support	$p < 0.10$, $\beta = 0.08$
H5: Explicit export knowledge ↔ tacit export knowledge	Yes	$p < 0.001$, $\beta' = 0.71$
H6: Explicit export knowledge → international performance	No	n.s.
H7: Tacit export knowledge → international performance	Yes	$p < 0.001$, $\beta' = 0.57$

Notes: → = positive impact, ↔ = positive correlation, β = standardized regression coefficient, β' = standardized correlation coefficient; n.s. = not significant

three or more entry modes. Similarly, post-hoc (Scheffe) tests indicated that companies that used three or more entry modes (mean = 4.55) had significantly higher levels of tacit knowledge ($p < 0.05$) than companies using one (mean = 3.75) or two modes (mean = 4.12).

Thus it appears that two different entry modes are sufficient to build greater explicit export knowledge. Companies that have experienced three or more different entry modes also achieve significantly higher levels of tacit knowledge. With just one exception, companies with experience in a single entry mode have opted for indirect exporting. Such experience in foreign markets evidently is not sufficient to build significant levels of export knowledge.

Linear regression analyses provided additional insights into the impact of the different entry modes (computed as dummy variables) on the levels of explicit and tacit knowledge. Because of the limited number of companies using specific types of entry mode, we could test only for the impact of the use of subsidiaries, associative modes (joint ventures and strategic alliance), and direct exporting, as we summarize in Tables 3 and 4.

The results in Table 3 clearly show that companies using subsidiaries or associative entry modes have higher explicit knowledge levels. Similarly, Table 4 indicates that companies using subsidiaries or associative entry modes have higher levels of tacit knowledge.

TABLE 3
Multiple stepwise regressions: Explicit international knowledge

Independent variables	Dependent variable: Explicit international knowledge	
	β coefficient	Variable t-statistic (p values)
Subsidiary	0.36	$p < 0.001$ (4.97)
Associative modes	0.49	$p < 0.001$ (3.86)
Direct exporting	0.06	0.1 (0.50)
	$R^2 = 0.34$; $R^2 \text{ adj.} = 0.33$	
	$F = 27.50$; $p < 0.001$	

TABLE 4
Multiple stepwise regressions: Tacit international knowledge variable

Independent variables	Dependent variable: Tacit international knowledge	
	β coefficient	Variable t-statistic (<i>p</i> values)
Subsidiary	0.28	$p < 0.001$ (3.47)
Associative modes	0.35	$p < 0.001$ (2.48)
Direct exporting	0.14	0.29 (1.50)
	$R^2 = 0.22$; $R^2_{adj.} = 0.20$	
	$F = 16.76$; $p < 0.001$	

Discussion

This study explores the role of entry modes in building foreign market-related knowledge and ultimately in the international performance of SMEs. Entry modes are forms of international experience and basic mechanisms of entering foreign markets, which means they support the acquisition and consolidation of SMEs' foreign experience. We focused on two dimensions of SMEs' entry modes for this analysis: the length and variety of their international experiences. The length of export experience corresponds to the number of years a SME has been operating abroad with different entry modes. To operationalize the variety of export experience, we used the number of entry modes SMEs have adopted in their international development.

Entry modes play an important role in fostering or reinforcing the level of explicit foreign market knowledge possessed by SMEs. Building export knowledge seems more a question of the variety of entry modes than the duration of foreign operations. The greater the number of entry modes, the more our sample SMEs consolidate their level of explicit knowledge relative to foreign markets (i.e., general background information, potential clients, competition, products, price and payment practices, communication, and distribution). When SMEs use two or more entry modes, they demonstrate significantly higher explicit knowledge levels than do those that use a single entry mode. If we control for the impact of firm size and percentage of foreign sales, only the latter variable has a weak impact on explicit knowledge stocks. This finding suggests that small SMEs can achieve levels of explicit knowledge about foreign markets that are comparable to the levels that big firms obtain. Some entry modes, especially associative modes and the creation of subsidiaries, appear particularly effective for the consolidation of explicit export knowledge in SMEs. Stronger local integration abroad may thus be an effective way to build explicit foreign market knowledge, possibly by taking advantage of the market knowledge and experiences of

local workers. Indirect exporting alone generally is not sufficient to build significant levels of export knowledge.

It has been postulated that entry modes also reinforce the levels of tacit foreign market knowledge that characterize SMEs. But though the number of entry modes used by a company has a weak impact on tacit export knowledge, the impact of the length of the international experience on tacit knowledge is not significant. These results suggest that in a modern business context, building tacit knowledge about export management does not depend mainly on how long a company has been operating abroad. Rather, the variety of experiences seem relatively more beneficial for reinforcing knowledge levels. The Uppsala view of SMEs' internationalization as a progressive process (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977), in which firms build foreign market-related knowledge as they gain experience with foreign settings, thus does not hold entirely true for the companies in our sample. Because the variety of experience appears more important than duration, our research provides only partial support for the proposition of the Uppsala model that firms resort to inertial and reactive choices of entry modes when they become more familiar with foreign markets. We also find evidence that SMEs make proactive strategic decisions to employ several entry modes simultaneously in the early phases of their internationalization process, reinforce their knowledge resources base, and attain greater international performance.

Overall, tacit knowledge is a direct function of the variety of the entry modes experienced to only a small degree. Yet in our sample, SMEs with experience with three or more different entry modes exhibit significantly higher levels of tacit knowledge about export markets. As observed for explicit knowledge, associative entry modes and subsidiaries are most beneficial with regard to increasing levels of tacit knowledge. Through networking (e.g., building joint ventures) and their strong commitment to foreign markets (e.g., establishing subsidiaries), firms can gain access to

other firms' knowledge, probably without going through the experiences suggested by Eriksson et al. (1997). Networks expose firms to new opportunities, help them obtain knowledge, and give them a means to learn from the experiences of others (Welch and Welch, 1996; Chetty and Blankenburg, 2000). The insignificant impact of the duration of export experience reinforces Forsgren's (2002) argument that the Uppsala model represents only a narrow interpretation of learning. In the past two decades, research has shown that firms can learn in other ways, including imitative learning by observing other firms, hiring people with the necessary knowledge, licensing, strategic alliances, company acquisitions, or focused market research activities (Welch and Welch, 1996, Forsgren, 2002).

As we expected, explicit and tacit foreign market are strongly and positively correlated. Knowledge creation seems to result from the interaction of tacit and explicit knowledge, which yield and reinforce each other (Nonaka, 1994; Hedlund, 1994; Spender, 1998). Through the mechanisms of social integration and implementation into firms' actions, SMEs seem to encode or transform their explicit into tacit knowledge (Nonaka et al., 2000; Autio et al., 2000). The levels of tacit knowledge might help enterprises make sense of the newly acquired explicit knowledge, as suggested by Cohen and Levinthal (1990).

Furthermore, tacit, idiosyncratic SMEs' foreign market-related knowledge may become a key strategic asset and source of performance, though explicit export knowledge has no significant impact on international performance. However, the KBV notes that in dynamic, turbulent environments, the contribution of knowledge-based assets, especially tacit ones, is particularly key to performance (Grant, 1996; Miller and Shamsie, 1996; DeNisi et al., 2003; Patriotta, 2004; Spender, 2007). Our results further suggest that SMEs' international tacit knowledge levels have positive and significant impacts on the degree of international performance, in line with previous studies of manufacturing SMEs' internationalization processes (e.g., Holzmüller and Kasper 1991; Axinn et al., 1996; Cavusgil and Zou, 1994; Ramangalahy, 2001; Julien and Ramangalahy, 2003).

Firm size and percentage of foreign sales do not play determinant roles for levels of international performance. This result is not particularly surprising, in that prior research has offered mixed evidence on these points (Zou et al., 2003).

Conclusion, limitations, and extensions

Our research offers a better understanding of how internationalization processes lead to the development of export knowledge and influence international performance. Both the variety and the length of international experiences tend to increase the level of explicit foreign market-related knowledge in SMEs. The impact of entry modes on tacit foreign market-related knowledge is mostly indirect, through

the reinforcement of explicit knowledge. In turn, our research has implications for managers, public policymakers, and academics. Managers should realize that using several entry modes simultaneously builds knowledge stocks more quickly in the company and narrows the gap with companies that enjoy longer international experience. The use of subsidiaries, strategic alliances, and joint ventures imply a stronger involvement with local partners and help SMEs gain higher levels of knowledge-based international resources than do more basic entry modes. Thus, companies that are already operating abroad but feel they lack foreign market knowledge should reconsider their entry modes. Pursuing additional modes could be a more effective way to increase their international experience and performance than incremental learning with a unique partner in a steady organizational setting. Companies just initiating their international sales should take care in their choice of entry mode and consider not only traditional criteria, such as cost, control, and commitment, but also the variety and length of use of the various entry modes. Staying informed about foreign markets (explicit export knowledge) also increases the level of foreign market tacit knowledge, and vice versa. Ultimately though, only tacit knowledge drives SMEs international performance. Finally, firm size has no influence on either knowledge-based resources or international performance, so small firms should not accept any exclusions from these processes, nor are they systematically handicapped in their efforts to attain strong international performance.

For policymakers, our results suggest they should encourage small firms to use associative foreign entry modes and establish subsidiaries in foreign markets. Aid programs could be oriented toward supporting such behavior, such as with additional opportunities and incentives to partner with foreign companies, create joint ventures, and possibly even to establish foreign subsidiaries.

On the theoretical front, the impact of entry modes on the levels of tacit international knowledge of SMEs is rather indirect. The variety of entry modes seems more important than the length of international experiences. Thus, the progressive internationalization process described in the Uppsala model (Johanson and Vahlne, 1977), which emphasizes experiential market knowledge acquisition, does not fit the internationalization configuration of companies in our sample. The length of their international experience does not contribute to reinforcements of the levels of SMEs' tacit knowledge on export markets. Using diverse entry modes, they are more likely to build both explicit and some tacit knowledge about foreign markets. The variety of entry modes reinforces SMEs' foreign market-related levels of tacit knowledge.

A more entrepreneurial approach to SMEs' internationalization, such as the KBV of the firm, thus seems more suitable to capture the dynamics related to knowledge resource development (Kuivalainen and Bell, 2004). Moreover, our

results reinforce the assumptions of the KBV regarding the positional advantage of SMEs in terms of the tacit knowledge resources for business performance (e.g. Grant, 1996; Kuivalainen and Bell, 2004).

Finally, this study suffers by several limitations, including sample size and representation, most obviously. With our limited number of respondents, we could not test for the impact of "intermediate" entry modes, such as licensing or franchising. By taking a single industry in a single country under scrutiny, we cannot offer support for any generalization of our results beyond the French steel industry. The responding companies also appeared more successful than the average French SME operating in the steel industry, which points to a possible nonresponse bias. Furthermore, we concentrated exclusively on the role played by entry modes to reinforce knowledge levels. Other well-known internal factors, such as the efficiency of coordination (e.g., communication, shared vision, efficiency of the transfer and integration of knowledge) also should contribute to the creation of knowledge resources and may interact with the variables we have analyzed. Access to foreign market knowledge outside the firm, as well as the competitive environment in both domestic and foreign markets, should be included in further investigations as well. Some measures we used, such as the different knowledge-related constructs, represent yet another limitation. The pretests revealed the need for considerable adaptations of the initial measures, to ensure respondents understood the questions. Prior literature does not abound with measures of knowledge-related constructs, and existing measures have prompted heavy criticisms for failing to capture the complex nature of knowledge-based resources fully (Kuivalainen and Bell, 2004). We offer similar warnings regarding existing measures of entry modes. For this study, we only assessed the length and variety of entry modes; it would be helpful to include other scales that include further dimensions, such as perceived usefulness or ease of implementation of different entry modes. Even with these limitations though, this study provides deeper insights into the way entry modes influence international knowledge resources and ultimately international performance.

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APPENDIX 1
Operationalization of the research variables (1/2)

Variable/Construct	Items and scales	References
Length of the international experience	<p>Sum of the number of years of experience with using one of the following modes of foreign presence:</p> <ul style="list-style-type: none"> • direct exporting • indirect exporting • associative modes • franchising or licensing • subsidiary • Internet • Others 	Adapted from Kuivalainen and Bell (2004)
Variety of the international experience	Number of different entry modes used	Adapted from Kuivalainen and Bell (2004)
Explicit export knowledge	<p>Please indicate to which extent are you informed, compared to your main competitors on export markets, regarding the following elements on your export markets (items are measured on a 7-point scale ranging from -3 = “informed much less than the competitors” to +3 = “informed much more than competitors”):</p> <ul style="list-style-type: none"> • General foreign market situation (economic, social, political environment, barriers to exporting, legislation) • Foreign clients and competitors (characteristics, needs, demand, preferences, mentalities, buying behavior, new niches, potential partners) • Competitors (main actors on the market, general situation, strategies they deploy, forces and strengths) • Products (characteristics, technical norms, adaptation needs, packaging, innovation cycles) • Prices and payment methods (level, tendencies, margins and commissions, credit policies, mode and delay of payment) • Communication (available media, methods employed, type of message, costs) • Distribution practices (channels, costs, selling points, transport and deposit infrastructure, payment delays, intermediaries efficiency) 	Adapted from Ramangalahy (2001)

APPENDIX 1

Operationalization of the research variables (2/2)

Tacit export knowledge	<p>Please indicate to which extent your enterprise owns international competencies compared to your main competitors on export markets in the fields listed here bellow (items are measured on a 7-point-differential scale ranging from 1 = “much less than competitors” to 7 = “much more than competitors”):</p> <ul style="list-style-type: none"> • Networking (e.g.: identifying contacts abroad, entertaining developing relationships with the contacts abroad, knowledge and understanding of business practices, foreign languages skills) • International marketing management (e.g.: setting marketing goals, formulating creative marketing strategies, translating marketing strategies into action, control and evaluation of marketing costs) • Foreign markets segmentation (e.g. : opportunity seeking, studying foreign markets characteristics, targeting and penetrating foreign markets, identification potential clients/markets) • Product strategy (e.g.: R&D of new products/services, products and service adaptation, packaging, launching successfully new products/ services) • Price strategy (e.g. : negotiating and fixing the price and the payment delays, responsiveness in terms of pricing to market change, fixing the margins, evaluation of the credit risks) • Communication strategy (e.g.: promoting sales, products, developing enterprise image and reputation, managing communication programs) • Distribution strategy (e.g. : selecting the distributor agents and the sale force, entertaining the relations/collaboration with distributor agents, choosing the localization of the selling/distribution points, training selling personnel) • Information management (e.g. : identification of information sources, collecting information on clients and competitors, tracking customers wants and needs, collecting and analyzing market information) 	Adapted from Ramangalahy (2001)
Export performance	<p>Export sales growth over the last three years Export profits growth over the last three years Overall perceived export performance</p>	Adapted from Souchon and Durden (2002), Zou et al. (1998)
Export percentage	Export sales in relation to total turnover	
Firm size	Number of employees	